

Work Order ID 140971

Tuesday, January 26, 2016 3:17:02 PM

646.9711
B140971
REV. C

140971

Page 1

Item ID: 646.9711

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Blade

Start Date: 1/26/2016 Start Qty: 10.00

10

Cust Item ID:

Required Date: 1/26/2016 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: MCS Date: JAN 28 2016

Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.9700	C (ECN)

100

0.00

100

BAND SAW

Bandsaw

Memo

0.01

Jeaspa Bandsaw

Cut Blank at 4.625"

10 0 DAS 20 9-89 16-04-01

110

0.01

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.03

HAAS CNC vertical machine #1

1-Machine per folio FB135

DWG REV: REC

FOLIO REV: 11

10 0 16/04/03

2- deburr and break all sharp edges except otherwise noted

KNIFE EDGE MUST BE SHARPENED USING STONE, REMOVE ALL BURRS ON CUTTING EDGE

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
☐ OTHER : _____					

Work Order ID 140971

Tuesday, January 26, 2016 3:17:02 PM

140971

Page 2

Item ID: 646.9711

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Blade

Start Date: 1/26/2016 Start Qty: 10.00

10

Cust Item ID:

Required Date: 1/26/2016 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120						10	2		16/04/03
QC	Memo	0.00							
Quality Control									
130	QC8- Inspect parts - second check	0.00							DAS 14 9-23
130						10	2		16/04/03
QC	Memo	0.00							
Quality Control									
140	Outsource process - Heat Treat	0.00							DAS 13 9-89
140						10		APR 04 2016	
Outsource1	Memo	40.00							
Outsource process - Heat Treat	HEAT TREAT AS PER DWG, SEE NOTE #3								
	ISSUE P/O: 31919								

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 140971

Tuesday, January 26, 2016 3:17:02 PM

140971

Page 3

Item ID: 646.9711

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Blade

Start Date: 1/26/2016 Start Qty: 10.00

10

Cust Item ID:

Required Date: 1/26/2016 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging									
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.00							
Quality Control									
160	Spray Painting per QSI005 4.2	0.00							
160									
SprayPaint	Memo	0.00							
Spray Painting	***THIN COAT OF PRIMER***								
	PRIME AS PER DWG, SEE NOTE #4								
	PRIMER BATCH: <u>133399</u>								

10x 8016 04-16

(10) DAS 38 9-89 APR 15 2016

10 DAS 41 9-89 16-4-18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Tuesday, January 26, 2016 3:17:02 PM

Page 4

Accept

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

10

10

Customer:

Reference:

Run Start *NR1*

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Operation Description

Set Up/ Run Hours

Tool ID	Tool #	Plan Code
---------	--------	-----------

**Accept
Qty**

Reject
Qty

Reject Number

**Insp.
Stamp**

QC14- Inspect Spray Paint

0.00

170

QC

Memo

0.00

Quality Control

APR 19 2016

Identify as per dwg & Stock Location: 9C 106 0.00

180

Packaging

Memo

0.00

Packaging

DAS
8
9-89

APR 20 2016

QC21- Final Inspection - Work Order Release

0.00

190

OC

Memo

0.02

Quality Control

11 16-21-24

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Tuesday, January 26, 2016 3:17:01 PM

Work Order ID: 140971

140971

Parent Item: 646.9711

646.9711

Parent Item Name: Blade

Start Date: 1/26/2016

Required Date: 1/26/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 12/09/24 JFS VERIFY BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased	No			100	f	60.8810	0.386	4.063158			

MSTFEI -A2-B0.500X1.250

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

4.000'

DAS
20
9-89 16-04-01

Location

Loc Qty

Loc Code

MAT010

60.881

M126438

5.452

M127494

0.22

(M131783)

43.209

M133923

12

4.000'

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

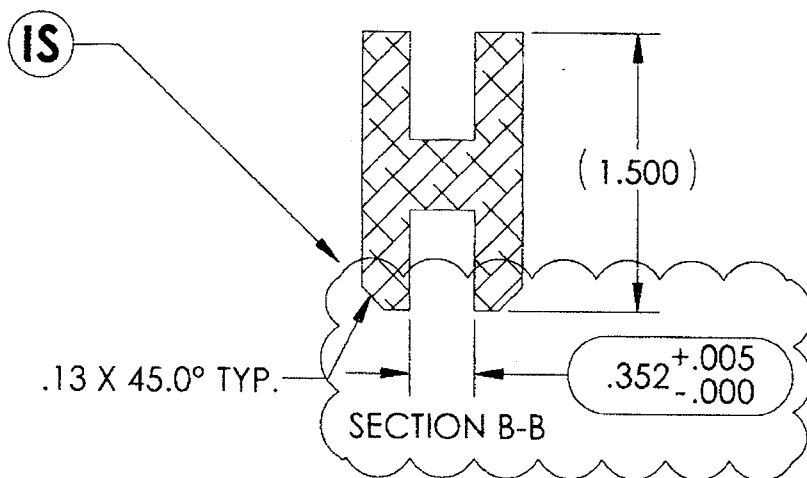
QA Closed: _____ Date: _____

Work Order update only ☐

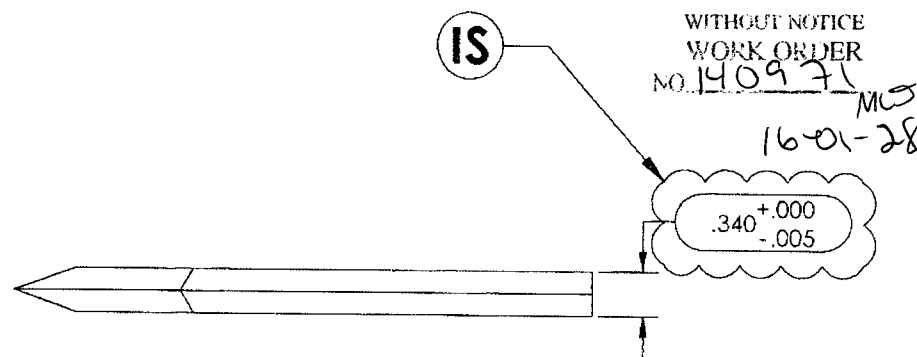
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO.		04559		SHEET 1 OF 1	
	DWG NO.	646.9700	REV:	C	PREPARED BY	D. MEJIA
	DATE:		06/11/2014		EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: CUTTER SUB ASSY					
APPROVED BY:		ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF. NEXT ORDER	
TRANSACTION CODES (TC): A-ADD R-REVISE		REASON: ADDED DIMENSION AND TOLERANCE				ECR: D-14-05
		C-CREATE D-DELETE				

SHEET 2, ZONE D7 IS:

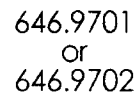


SHEET 5, ZONE B5 IS:



DOCUMENTS EFFECTED:	☐ MDL	☐ INSTALL INSTRUCTIONS	☐ ICA	☐ FMS	☐ BOM	CHANGE CATEGORY	DER REVIEW REQUIRED
						☐ MAJOR ☒ MINOR	☐ YES ☒ NO

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYP REVISION: PK2		NAC
RJC	INITIAL RELEASE	03/26/99	P. BRAVO
	INCORPORATED ECH D2744, D3036, Q2912	06/04/99	P. BRAVO
	INCORPORATED ECH D3067	07/02/99	P. BRAVO
C	INCORPORATED ECH D4039	08/06/99	P. BRAVO



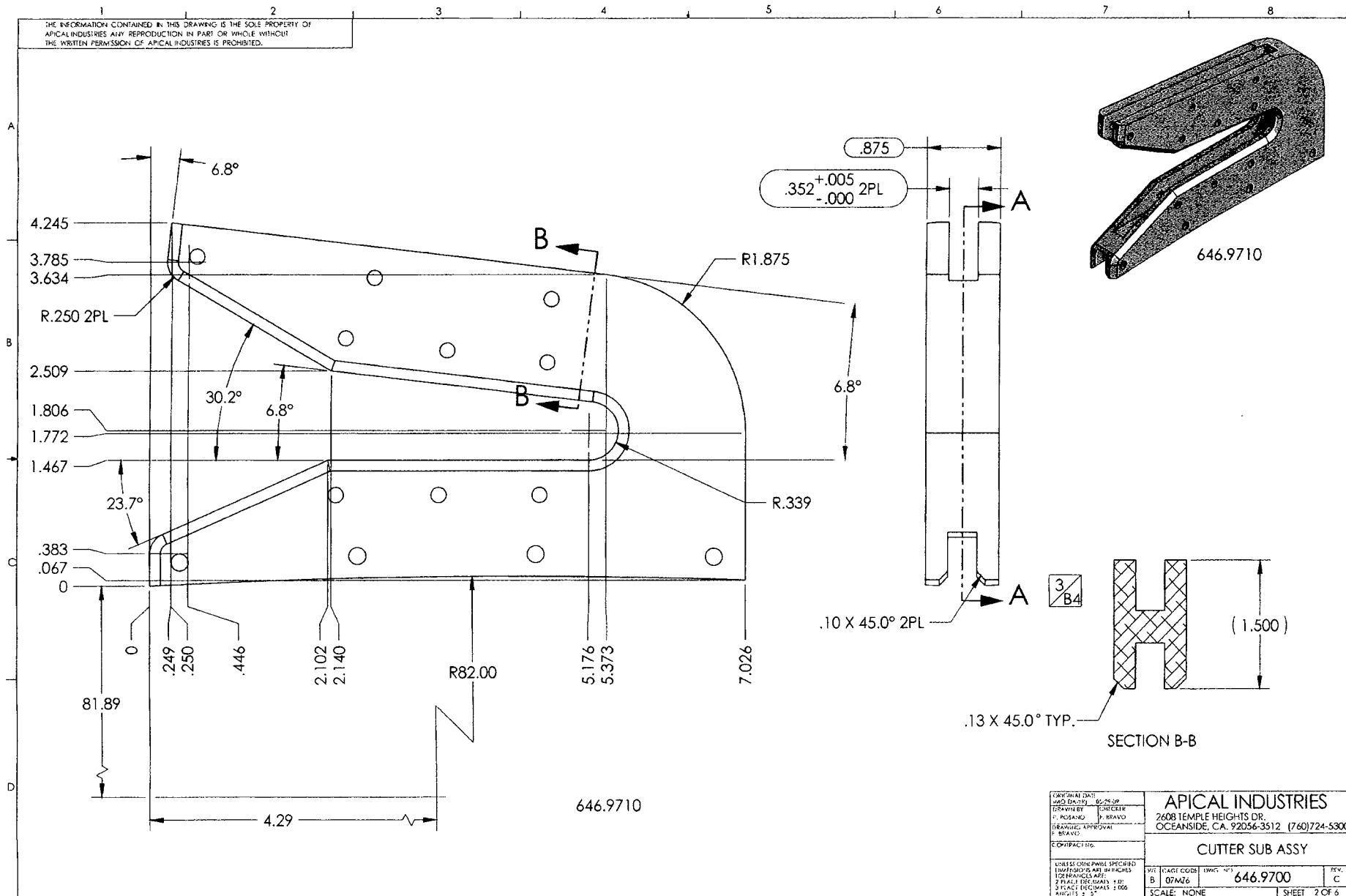
- ① MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- ② FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III.
CLASS 2, COLOR BLACK;
PRETREAT PRC-DESOTO PR-148 ADHESION PROMOTER;
PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX
- ③ MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- ④ FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX
 5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
 6. IDENTIFY IAW MPP-120
 7. APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
 8. CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
 9. ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

UNINCORPORATED ECN(s)

04550

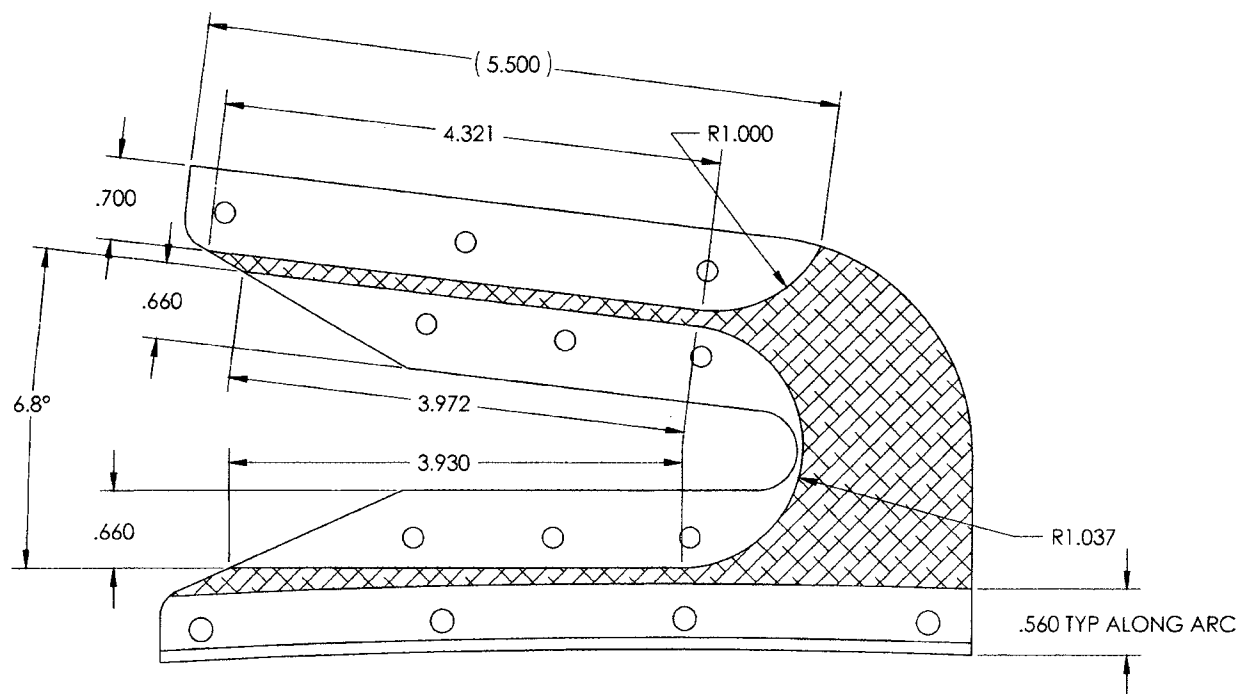
1	7	646.9712	BODY (U CHANNEL)		
6	6	601.1541	LOCKNUT	MS110472.08	
A/R	A/R	501.2764	RTV. LOCITE 598		
12	12	401.2764	WASHER	HA51149.10321	
6	6	301.2765	SCREW	MS27039-08/9	
2	2	646.9711	BLADE		
	1	646.9710	BODY		
		646.9702	CUTTER SUB ASSY (U CHANNEL)		
		646.9701	CUTTER SUB ASSY		
QTY	QTY	FIND #	PART #	DESCRIPTION	MATL SPEC.
QTY			PARTS LIST		
NEXT ASSY (S)			APICAL INDUSTRIES		
646.9600			2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300		
			CUTTER SUB ASSY		
COMPL. DATE 05-29-95 DRAWN BY: J. ROYACQ R. ROYACQ DRAWING APPROVAL: J. ROYACQ 05-29-95 (22) 1/2" x 1/2"			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE IN 32nds 1/2" PLACES DECIMALS ARE IN 16ths 1/16" PLACES DECIMALS ARE IN 16ths		
SHEET 1 OF 2 3 07M26			TOTAL: 200 646.9700 SCALE: NONE		
			REV: C 1 OF 6		

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



ORIGINAL DATE 1/20/05 DRAWN BY P. ROSANO CHECKED BY P. BRAVO DRAWING APPROVAL P. BRAVO CONTRACT NO.		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
ADDRESS OTHER PARTS SPECIFIED (DIFFERENCES ARE IN FIGURES) 100% PARTS ARE: 2 PLACES DECIMALS ± .01 3 PLACES DECIMALS ± .005 ANGLES ± .5°		VIT B	CAGE CODE 07M26
		1995 11/1	REV. C
		SCALE: NONE	SHEET 2 OF 6

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

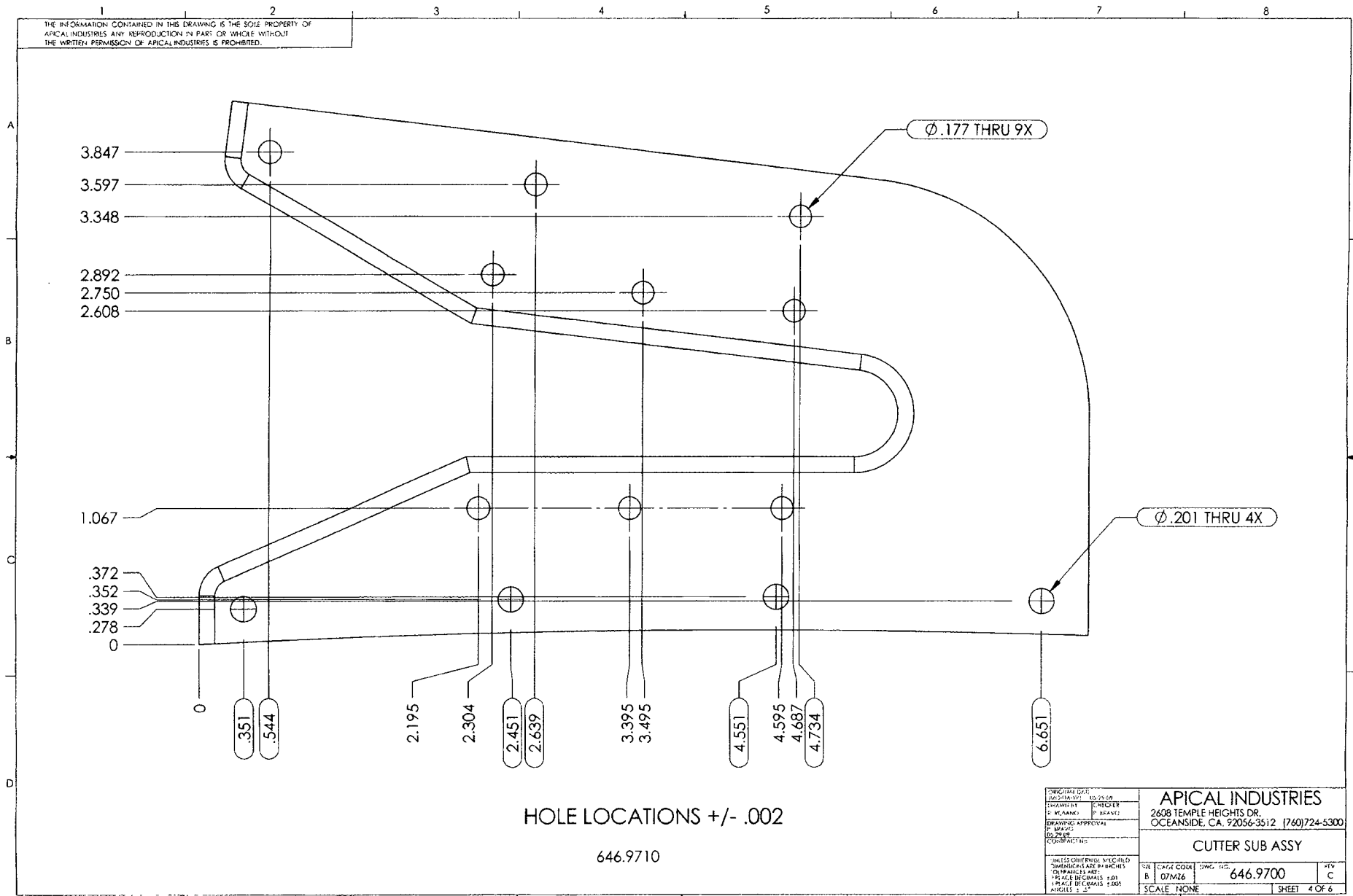


SECTION A-A $\frac{2}{C6}$

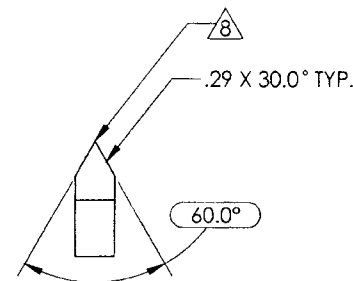
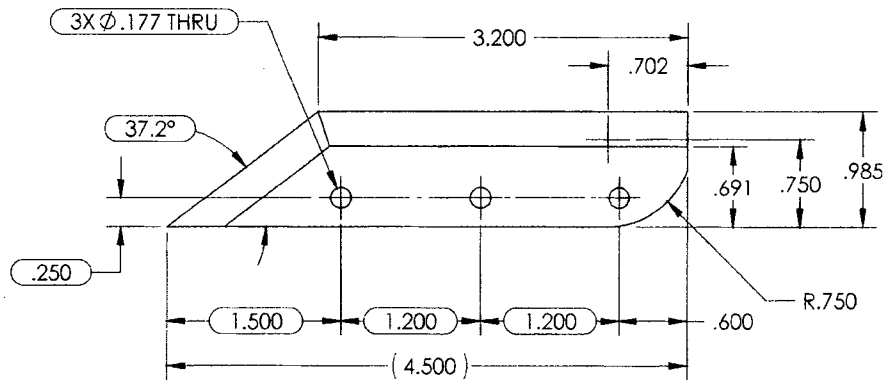
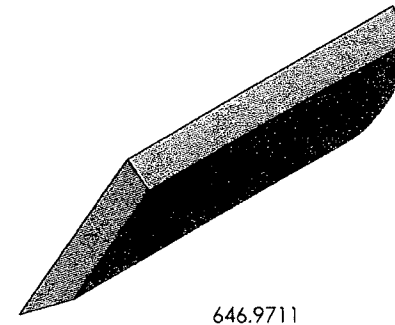
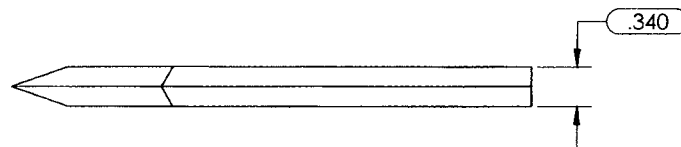
646.9710

ORIGINAL FILE ENC-DA-101 DRAWN BY: J. B. BROWN CHECKED BY: J. B. BROWN DATE: 06-22-99 P. 00000310		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BROWN DATE: 06-22-99 P. 00000310		CUTTER SUB ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		JOB: 646.9710 DWG. NO: 646.9700	REV: C
SCALE: NONE		SHEET: 3 OF 6	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



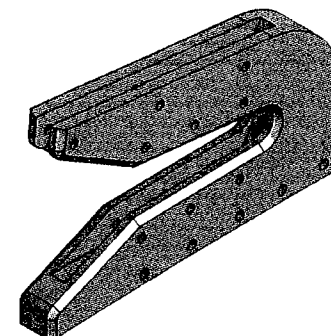
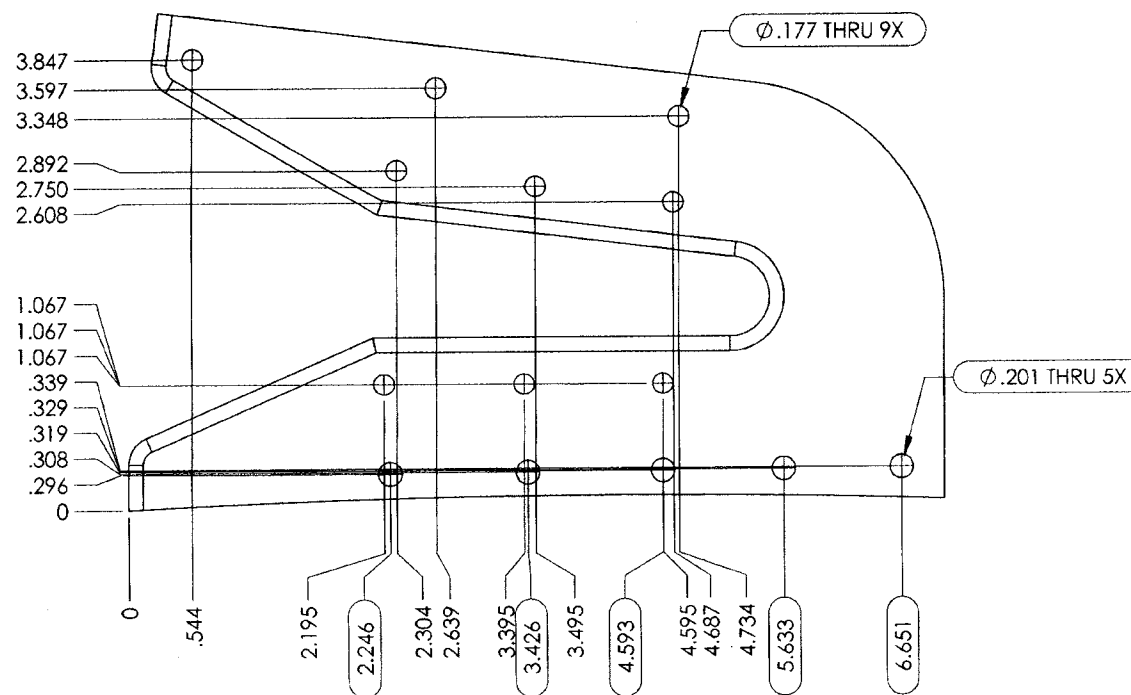
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES AND REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



646.9711

ORIGINAL DATE 06/21/2009 15:29:09 DRAWN BY R. KOSCHKE R. PARRIS DRAWING APPROVAL P. SAMPSON 06-29-09 CONTRACT # 110	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
CUTTER SUB ASSY				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FINISHES ARE: 1 PLAIN DIMENSIONS ±.01 2 PLAIN DIMENSIONS ±.01 3 PLAIN DIMENSIONS ±.01 4 HONED	SVP SCALE B	CAD# CODE 070166	UMG # 12 646.9700	REV C
SCALE NONE			SHEET 5 OF 6	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES AND REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



646.9712 $\triangle 9$

646.9712

ORIGINAL DATE: 05-29-09		APICAL INDUSTRIES	
MOD. DATE:	CHECKER:	2608 TEMPLE HEIGHTS DR.	
DRAWN BY: Y. BUSANG	IN. SHAWD	OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL:		CUTTER SUB ASSY	
CONTRACT NO.:			
UNLESS OTHERWISE SPECIFIED		SRI: CAGE CODE	REV. C
DIMENSIONS ARE IN INCHES		B: 07MA26	646.9700
TOLERANCES ARE:		SCALE: NONE	SHEET: 6 OF 6
2 PLACE DECIMALS .XX			
3 PLACE DECIMALS .XXX			
ALL DIMENSIONS .001			



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO31919**

Purchase Order Date 4/4/2016

PO Print Date 4/4/2016

Page Number 4 of 4

Order From :
METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

VC-MET004

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 450 473 1884

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

FedEx Economy collect

7 140971

646.9711 BLADE

4/19/2016

Yes

4/19/2016

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

10.00

\$0.00

\$0.00

FINISH: HEAT TREAT TO 58-62 RC
ROCKWELL HARDNESS

PART ARE MADE FROM AISI A2 TOOL STEEL

PLEASE NOTE: DETAIL C OF C REQUIRED

SPW 04-14

Line Total: \$0.00

8 71401-45 PROCUREMENT
QUALITY CLAUSES

4/19/2016

1.00

\$0.00

\$0.00

No

4/19/2016

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A020 non-destructive test/inspection identification
A021 dart aerospace processing
A024 process certifications
A026 certification of material conformance

Line Total: \$0.00

PO Total: \$0.00

CL

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 1

Change Date: 4/4/2016

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
309892	1	110184

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À / Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
31919		A2	2016/4/6	fed
QUANTITÉ Quantity	No. PIÈCE Part No.	NOM DE LA PIÈCE Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
				24,66

80 646.3013 BLADE

(12) 646.3013 142489

(12) 646.3014 142467

(12) 646.3015 141062

(10) 646.3314 142644

(12) 646.3315 142476

(12) 646.3316 142636

(10) 646.9711 140971

1 BC = 7 SACS

SP/6-04-14

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
	1	1bc=7sacs ne pas melanger les lots

CERTIFICAT

EMPAQUETAGE Packing	
------------------------	--

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 80

POIDS EXPÉDIÉ / Weight Shipped : 24,66

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

CERTIFICAT

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 80

POIDS EXPÉDIÉ / Weight Shipped : 24,66

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2016/04/11

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
309892	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
31919		A2		

SPECIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPECIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	5	59 - 61 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
80	24,66	646.3013 BLADE (12) 646.3013 142489 (12) 646.3014 142467 (12) 646.3015 141062 (10) 646.3314 142644 (12) 646.3315 142476 (12) 646.3316 142636 (10) 646.9711 140971 1 BC = 7 SACS

COMMENTAIRES / comments

APPROUVÉ par / Approved by:

DATE: 2016-04-11

[illegible]

Abstract—The purpose of this study was to determine if there were differences in the prevalence of musculoskeletal disorders between two groups of nurses working in different departments of a hospital. The sample consisted of 100 nurses from the intensive care unit (ICU) and 100 nurses from the medical-surgical department. Data were collected by means of a questionnaire containing information about sociodemographic characteristics, work conditions, and musculoskeletal symptoms. The results showed that the prevalence of musculoskeletal disorders was higher among ICU nurses than among medical-surgical nurses. The most prevalent disorder was low back pain, followed by neck pain, shoulder pain, and wrist/hand pain. The prevalence of musculoskeletal disorders was significantly associated with age, years of experience, type of shift, and duration of exposure to risk factors.

CONFIDENTIAL

1. The first step is to identify the problem. This involves understanding the current situation and what needs to be improved.

36004 816L JUL 8
1421 78 01 11

100-10000

COVENANTS

DATE 50-7-41

AB-601W-2

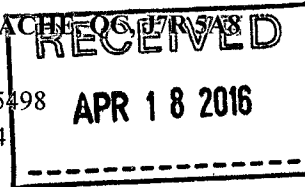
METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, Q.C. J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454



Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
309892	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
31919		A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed		RÉSULTATS DE TESTS / results	
HARDNESS	58 - 62 HRC		5 59 - 61 HRC	
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
80	24.66	646.3013 BLADE (12) 646.3013 142489 (12) 646.3014 142467 (12) 646.3015 141062 (10) 646.3314 142644 (12) 646.3315 142476 (12) 646.3316 142636 (10) 646.9711 140971 1 BC = 7 SACS		

COMMENTAIRES / comments

VAC HARDEN 1800F, 1:30 HR
DOUBLE TEMPER 400F, 2 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

APPROUVÉ par / Approved by:

Isabel Otero
QA Technician



DATE: 2016-04-13